HOW FAMOUS INVENTOR HAS CREATED NEW BREED OF SHEEP

phone Bell in Experimental Evolution.

INSTITUTE IS INTERESTED

Results Attracting Attention in Many Quarters-His Latest Flying Machine.

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WASHINGTON, D. C., August 25.—
Every man, woman and child has heard of Dr. Alexander Graham Bell, who, by inventing the telephone, annihilated distance in our social and business intercourse, and brought the mouths and ears of the human race together. Every deaf person reveres Dr. Bell as the promoter of his father's invention of visible speech, whereby the so-called dumb talk and understand their fellows, and the scientific world knows him for his many experiments along original lines, and just now especially for his new discoveries as to aerial navigation.

There is, however, a field in which Dr. Bell has been working of which the world knows nothing. It is a strange field for him, but, like the others in which he has teen so successful, one where practical results are being reached by the patient application of scientific principles. It is in experimental evolution, and that more especially as related to stock breeding. Dr. Bell has been working in this field for about sixteen years, and his work has already resulted in the origination of a new breed of sheep. It has also brought forth the discovery of principles, which, if carried out to their full, may in time make great changes in our sheep industry and in the physical make-up of that race of animals throughout the world.

Sheep Breeding in Australia and

Sheep Breeding in Australia and at Home.

at Home.

Dr. Bell's discoveries are not like anything attempted in the past. That sheep can be improved by selective breeding is well appreciated in all the great grazing countries. Take, for instance, Australia. I have seen rams sold there at auction at \$5,000 apiece for their wool-growing qualities, and have been told that the average fleece of seven pounds an flocks of thousands. In New Zeeland, the chof mutton country of the world, the weight of the lambs has been greatly bettered by proper breeding, and here in the United States, where we have something like \$6,000,000 sheep, dur best stockmen are in the same way adding to their profits on wool and mutton. Indeed, the breeding of fine sheep is now considered quite as important as the breeding of fine sheep is now considered quite as important as the breeding of fine cattle. Wool is selling for over thirty conts a pound, and we are shearing from forty to fifty million sheep every year. If we can add a pound to every fleece the increase in our wool clip will be forty million pounds per annum, and at present prices will add \$12,000,000 to its value.

An even greater result can be obtained

his value.

An even greater result can be obtained if we could have more and better lambs, for they form one of the chief receipts from our sheep industry They numbered 22,00,000 at the last census and were the offsprings of 32,00,000 ewes, averaging about two lambs to every three ewes, Had each of the ewes had twins our lamb rop would have equaled 04,000,000 instead of 22,000,000, and would have sold for three times as much.

Dr. Bell's Sheep

Dr. Bell's Sheep.

Dr. Bell's Sneep.

These faces give some idea of the practical side of Dr. Bell's experiments. The scientific side is even more interesting and far-reaching in its possibilities, and it is the one which appeals especially to him. The work is going on steadily upon his country estate near Baddeck, Nova Scotla, and now also at the farm of the Carnegle Institute on Long Island, where studies in experimental evolution are being made.

ing made.

Dr. Davenport, the head of the Carnegie farm, has been furnished with some
of Dr. Bell's sheep, and a set of carefully recorded experiments will be made
by him under the auspices of the Car-

compose my summer lone, in Nova Scotin, near Baddeck. Upun one of these farms I found a flock of fifty-one ewes, and the following spring I observed these farms I found a flock of fifty-one ewes, and the following spring I observed the about one-half of the lambs produced were twins. Some of the awes had but one lamb, but many had two, and I began to wonder if there was not some characteristic which would enable one to distinguish the twin-bearing ewes, To find out I made a careful examination of the milk-bags of all the mothers. Now the ordinary sheep way has but two nipples, and it is from those that the lamb draws all its milk. This way the care with my sheep. I noticed, however, that upon some of the bags were embissioned aipples in addition to those of usual size. In some cases these were burley percentible, and in none were they larger than good-sized pinules. Upon looking farther I found that the cwes bearing the embryonic nipples had far more twins then those not so marked. Of the ordinary ewas only 24 per cent, were twin-bearing, while of those which had these marks of an undeveloped milk supply, 43 per cent, had twins. This seemed to indicate that the marks meant something, and I then began to experiment to find out how much."

Queer Breeding-Experiments.

"Please tell me just what you hoped to ascertain, Dr. Bell." I asked.

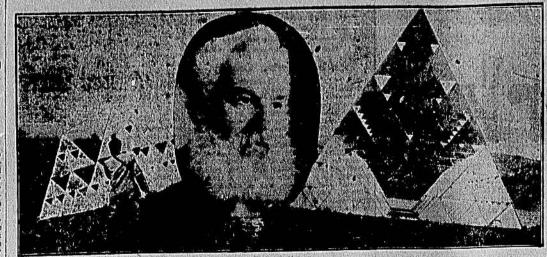
"In the first place, I wanted to find whether by selective breeding those now dead embryonic pimple-like nipples could be made alive and useful. I wanted to know whother they would grow and fill with mills; and whether, if they did so, the sheep growing them would yield a streater milk supply. In the second place I wanted to know whether, after I had produced a sheep with four good live nipples instead of two, that sheep would

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TELEPHONE B)LL AND HIS KITES.

veloped."
"What did you find?"
"In the first place," said Dr. Beil, "I experienced little difficulty in developing the embryonic nipples. I was soon able to raise sheep having four nipples, all yielding milk, and, indeed, for several years past nearly every ewe born on my farm has had four live functional nipples instead of two. In recent years I have produced a large number which have six such nipples, and I think there is no doubt but that I could eventually produced a six-nippled variety of sheep. Indeed, I have aiready produced a fournippled variety. Of the lambs dropped this year eight have six nipples, and in addition we have now, for the first time, a lamb with eight nipples. This is the only one of that character that I have produced, and the only one I have ever heard of.

The Question of Twins.

The Question of Twins.

The Question of Twins.

"How about the twins, Doctor?" I askod,
"As to that part of my investigations I have not been so successful. The proportion of twins born has been small, and the sheep with the four or six nipples have not proved more fertile than those of the ordinary kind. I believe, however, that by using 'twins only for breeding purposes it may be possible to raise a twin-bearing stock, and that is what I hope to do now. I feel that I have accomplished what I set out to perform as to my first proposition, and that by using my multi-nippled varieties, and breeding only from twins, I will aventually have a breed of sheep which will almost always produce twins."

"Were these sheep all born on your farm?"

my own flock. I was anxious for specimens from other flocks, and I gave the butchers of the Baddeck a standing offer of \$10 for any six-nippled owe they might bring in. This offer has been open for several years, but it has resulted in my securing only one such sheep out of the many thousands they have handled for killing, and that sheep was poorly marked. A year or so age I imported some horned Dorset ewes from Uxbridge, Ontario. The Dorsets are very prolific, and each of them gave me twins last year. This year one has given birth to twins and another to triplets, so that I have had nine lambs within two years from those two ewes. The Dorset sheep frequently have lambs twice in one year, it is that variety that I expect to use in my attempts to produce a breed of twin-bearing sheep."

"By you consider the additions you have made to the milk bag a valuable one?"

"We find that it is so," repiled price of the make in the line of serial flight?"

"Yes, the Wright brothers, of Dayton, are doing remarkable work. They have covered a distance of twenty-four miles than the ordinary sheep.

"Tell me something of the experiments which the Carnegle Institution is making with your sheep."

than the ordinary sheep.
"Tell me something of the experiments which the Carnegie Institution is making

iton.

The conversation here turned to Dr. Bell's most recent experiments in solving the problem of aerial navigation. He has a large laboratory on his farm in Nova Scotia and this work goes on steadily throughout the summer. He has made great advances since I talked with him about two years ago. He has discovered the unit of which the firing machine of the future is to be built, and some thing of the shape in which it should be put togother. He has, in short, ascertained the character of his builting in the character of his builting machine in a continue of propelling power, which with send such a body which can be sustained in the air no, and now he will experiment on the heart now he was a warrely to the work of the wor

shot of a man apparently flying. To his horror the kite carried the man about ferry feet from the ground, and the ploture showed a flying machine with a man attached to its tail. For a time the Doctor was greatly alarmed, and his alarm kept up until the man reached the oarth again.

Inventing a Propeller.

In my taik with Dr. Bell he spoke of possible propellers for flying machines saying:

"That is the question I shall now attempt to solve. We have discovered the unit out of which the body of our aerist vehicle is to be made. We know that it will fly and what we need now is something to move it onward, and turn it this way or that when it has once risen from the ground. You may remember that many of my experiments have been upon the water, and that I have constructed aerial vehicles which would float and which, when towed along by boats, at a certain speed, would rise into the air and fly. I shall experiment in somethan the sum way to ascertain the best motive power to propel such bodies through the air. I do not expect to attempt to never an articly new motor, but shall begin with the best motive power to propel such bodies it will will be gin with the best of our small commercial motors and work with them. We may possibly use a bitcycle motor at the start. We shall attach this to a boat in such a way that the motor will work in the air and be subject to the ordinary aerial currents. We shall have a framework built up above the boat and the motor will work in the air and be subject to the ordinary aerial currents. We shall have a framework built up above the boat and the motor will work the same conditions that it is to move the flying machine along. So far the experiments for such motors have been made within doors, where there are no currents of winds to disturb them and where the conditions are different from the Aero Club.

Frank G. CARENTER.

When We Shall Fly.

"Can you predict anything as to the future of the flying machine? When will man be able to successfully navigate the

which the Carnegie inaditution is making with your sheep."

"It is too soon to know what will be the "It is too soon to know what will be the "It is too soon to know what will be the "It is one of of great risk, and the man is make the attempt. The conversation here turned to Dr. Beil. The conversation here turned to Dr. Beil is most recent experiments in solving the problem of aerial navigation. He has such that it can be turned into a sleed, and that it can be turned into a sleed, and that it can be turned into a sleed, and that it can be turned into a sleed, and that it can be turned into a sleed, and that it can be turned into a sleed, and that it can be turned into a sleed, and that it can be turned into a sleed, and the machinery will move it over the local transfer and the machine is such that it can be turned into a sleed and the machine is an anti-machine in the machine



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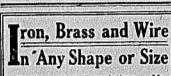


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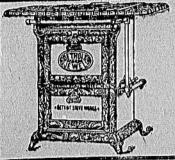
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